Light Application for Data Migration between Microsoft SQL Server Databases

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Abstract— Data migration is the process of transferring data between data storage systems, data formats, or computer systems. This paper provides a simple application to transfer data from several databases into a single database which has been designed as a data store, by using Microsoft SQL Server. In order to collect the data in one database, so that saves and analysis the data, assess performance and improves the level of services. Using C# programming language was developed the application program which transfers from several databases to single database. The result was data transmission without problems or loss.

Keywords— Data migration, Database, Data storage, SQL Server.

1. INTRODUCTION

Data migration is the process where data is transferred between databases or information systems, which means moving data from one system or domain to another without sacrificing security or losing data [1].

The database is defined as an associated data collection, where data mean recorded facts. A typical database represents some real world aspect and is used by one or more groups of users for specific purposes. A DBMS is an application package designed to deploy and manage a computerized database. Both the database and the applications together form a database system [2].

The act of transferring money from one place to another place. This may occur electronically or physically. Electronic funds transfer, an umbrella term mostly used for bank card-based payments, Wire transfer, an international, expedited bank-to-bank funds transfer, Giro, also known as direct deposit, Money order, transfer by postal cheque, money gram or others [3].

2. RELATED WORKS

Marin et al. (2010) presented an automated data migration solution which is capable of handling data transfer between different database instances. The solution works with dynamic data schemes and requires minimal input and interaction between users.

Kinyua & Shibwabo (2017) proposed an application is used as a portal allowing funds to be distributed easily and effectively through a cell phone through different network service providers. It provides a connection between the user's mobile accounts and other electronic money sources they have, particularly banks. This also allows money to be submitted in batch.

Wang et al. (2020) presented a new technique for data migration between different systems, expressing schema mapping as a Datalog program and synthesizing a Datalog program automatically from basic input-output examples for data migration. This approach transformed data between different scheme types (e.g. relational-to-graph, document-to-relational) and effectively performed synthesis by leveraging the Datalog semics.

3. DESIGN & IMPLEMENTATION

The technique is to collect the financial transfer transaction data for branches of a virtual money transfer company in one database via a programmatic application. In order to analysis and extraction of reports on the functioning of the company and its branches.

3.1 Study and Analysis of Branches Database

Studying the database of a one branch as a model of other branches which has the same schema. Where database was designed by using Microsoft SQL Server engine and consists of the tables that shown in Figure 1:



Fig. 1. Database diagram of Money Transfer Company

3.2 Database Design

In this step, the Microsoft SQL Server database engine was used to design a database with the same schema of the branches database. To serve as a store for all data of the company's branches, modifying the domain of some fields of tables to fit the quantity of data to be imported or migrated to. As shown in Figure 2:



Fig. 2. Database diagram of Stored Database (dbMoneyTransfer)

3.3 Application Design

Using C#. Net programming language in Visual studio 2013 community, an application program was designed to transfer and migrate data from the branch databases to the database used as a store which referred as dbMoneyTransfer. As shown in Figure 3.



Fig. 3. Main Interface of Data Migration Application

3.4 Testing

In the testing:

• Using the SQL Server 2014 express edition database management system, was attached all databases which data are imported from, as well as the repository database, as shown in Figure 4.



Fig. 4. Microsoft SQL Server database (DBMS)

• Using the data migration application, going to interface of import of data from the main menu, can choose the source database from databases list, and the destination database, as well, as shown in Figure 5.



Fig. 5. Import of Data Interface

• In the main menu of the application, the tables and the imported data are viewed, as shown in Figure 6.

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Branch	ser	Town	Curre	ency	TransferType	vTransfe	r
rce ReceiverName	Target	Date	Currency	Amount	Transfer Number	.No	
احمد سعيد عبدالله لرضي المكا	القطن	20/01/2018	ربيال يمني	40000	01111111234	1	
انور عبدالخالق محمد باقديم الشح	دو عن	20/01/2018	ربيال يمني	60000	01111111235	2	
							*4

Fig. 6. Show of Data Interface

4. RESULTS

Using the proposed application for data migration, the number of results were drawn. Firstly, needing to attach all databases to Microsoft SQL Server database via DBMS. Secondly, needing to specify the source and target database and this is very important. Third, the application of data migration are importing data from source database tables to the matching destination database tables.

5. CONCLUSION

The migration of the data from multiple databases to a single database (MS-SQL Server) helped in enhancing the performance and providing report analysis. Data are effectively transferred and stored without any loss of information.

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